

Contemplating Infinity

Justin Brody

Goucher College

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Contemplating Infinity was a first-year seminar offered in the Fall of 2014 at Goucher College.

- The main idea was to use meditation as a vehicle for mathematical contemplation.
- Students were taught a basic concentration (*shamatha*) practice and were then taught how to use analytical meditation (*vipashyana*) as a vehicle for engaging with the mathematics and philosophy of the infinite.
- The course was inspired by programs at Gampo Abbey and Nitartha Institute, which were in turn inspired by Tibetan monastic colleges (*shedras*).

Learning Objectives

- 1 Introduce students to meditation as a “life” practice
- 2 Introduce students to meditation as an “academic” practice
- 3 Introduce students to some beautiful mathematics and philosophy

From Nalandabodhi:

... all forms of shamatha are designed to help calm the mind and bring forth its natural qualities of spaciousness, clarity, and attentiveness. These qualities allow you to work with the meditation practices that build upon the foundation of shamatha later on.

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By practicing analytical meditation, you harness and further develop the more active, inquisitive, and penetrating qualities of the mind.

Meditation

Students were taught *shamatha* and asked to develop a daily practice.

Week	Daily Expectation	Friday Group Session
Week 3	10 minutes	20 minutes
Week 4	12 minutes	20 minutes
Week 5	15 minutes	25 minutes
Week 6	17 minutes	25 minutes
Week 7	20 minutes	30 minutes
Week 8	25 minutes	50 minutes
Week 9	30 minutes	50 minutes
Week 10	40 minutes	50 minutes
Week 11	40 minutes	50 minutes
Week 12 on	45 minutes	50 minutes

Students were asked to sit for a 6 hour retreat toward the end of the semester.

Analytical Meditation

Friday sessions would include analytical meditation in the middle of the session. Students would be given a short phrase, asked to repeat it to themselves, contemplate it, and then rest their minds. For example, at one point they were asked to contemplate the statement

The set of rational numbers has the same cardinality as the set of natural numbers.

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- Shamatha practice helps them stay focused on the topic.
- Depth over breadth; but breadth comes naturally.
- Ideally students will learn to stay engaged when confused
- Ideally students will learn to make meaningful connections between ideas.

We studied the following topics

- The infinite in set theory, culminating in Cantor's Theorem.
- The infinite in logic, culminating in Gödel's First Incompleteness Theorem.
- The infinite in philosophy, specifically by working through increasingly sophisticated arguments about Zeno's Paradoxes.

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Reflections

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- Need better accountability for daily sitting. There seemed to be a strong correlation between the degree to which students engaged in daily practice and the degree to which they benefited from the course.
- Analytical meditation didn't quite seem to work, but hopefully this will develop as other parts of the course come together.

Thanks

Thank-you!